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ROTHWELL, FIGG, ERNST & MANBECK, P.C.
1425 K STREET, N.W.
SUITE 800
WASHINGTON, DC 20005

EXAMINER	
SHIBUYA, MARK LANCE	
ART UNIT	**PAPER NUMBER**
1639	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/13/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/13/2007.

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PTO-PAT-Email@rfem.com

Office Action Summary	Application No.	Applicant(s)	
	10/019,052	NEW ET AL.	
	Examiner	Art Unit	
	Mark L. Shibuya, Ph.D.	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 23-32* is/are pending in the application.

4a) Of the above claim(s) *23-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/20/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-10, 23-32 are pending. Claim 32 is newly added. Claims 23-31 are withdrawn from further consideration as drawn to a non-elected Invention. Claims 1-10 and 32 are examined.

Priority

2. This application is the national stage of International Application PCT/GB00/02465, filed 6/27/2000.

3. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in the United Kingdom on 06/28/1999. Applicant's provision of a certified copy of United Kingdom Application No. 9915074.0 is acknowledged.

Withdrawn Objections/Rejections

4. The following objections/rejections have been withdrawn:

5. Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is for lack of written description.

This rejection is withdrawn in view of applicant's arguments.

6. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

This rejection is withdrawn in view of applicant's arguments and amendments to the claims.

7. Claims 1-12 are rejected under 35 U.S.C. 102(b, e) as being anticipated by Toth et al., 5,882,645 (IDS entered 12/27/2001, cite no. 2).

This rejection is withdrawn in view of applicant's arguments and amendments to the claims.

Information Disclosure Statement

8. The information disclosure statement (IDS) submitted on 6/20/06 was filed after the mailing date of the non-final rejection on 12/20/2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Nucleotide and/or Amino Acid Sequence Disclosure

9. Applicant's request to withdraw the Sequence Listing is acknowledged.

Specification

10. The amendments filed 6/20/2007 and 11/03/2006 are objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The amendments to the specification withdrawing the Sequence Listing and amending Tables of conjugates in the Specification change the scope of the application's disclosure by removing sequence data and so constitute new matter.

Applicant is required to cancel the new matter in the reply to this Office Action.

Maintained Claim Rejections - 35 USC § 102

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Crabtree et al., WO 95/02684 A1. This rejection is maintained for the reasons of record as set forth in the previous Office action. The rejection is copied below for the convenience of the reader.

The claims are drawn to a composition for interacting with a ligand, which composition comprises a non-covalent association of a plurality of distinct conjugates, each conjugate comprising a head group and a tail group, wherein tail groups of the conjugates form a hydrophobic aggregation and the conjugates are movable within the association so that, in the presence of a ligand, at least two of the head groups are appropriately positioned to form an epitope capable of interacting with the ligand more strongly than each of head groups individually; and variations thereof.

Crabtree et al., WO 95/02684 A1, throughout the publication, disclose chimeric proteins which contain at least one ligand-binding (or "receptor") domain fused to an action domain within a cell (pp. 3-4), wherein the receptor domain comprises amino acids and peptide, wherein the chimeric protein may homodimerize or heterodimerize (pp. 14-15) to the ligand; a composition for interacting with a ligand,

which composition comprises a non-covalent association of a plurality of distinct conjugates, each conjugate comprising a head group of various receptor domains, (which would inherently include at least acidic and basic amino acids) and an optional and sometimes preferred membrane binding domain which includes a transmembrane domain or an attached lipid for translocating the fused protein to the cell surface/membrane and retaining the protein bound to the cell surface membrane (pp. 20, 29-30, Figure 15) reading on a tail group, wherein tail groups of the conjugates form a hydrophobic aggregation and the conjugates are movable by virtue of the transmembrane domain, within the association so that, in the presence of a ligand, at least two of the head groups are appropriately positioned to form an epitope capable of interacting with the ligand more strongly than each of head groups individually, because the bind as more sites. Crabtree at p. 30 discloses a lipid retention domain having from about 12 to 24 carbon atoms, particularly 14 carbon atoms, and more particularly myristoyl, joined to glycine (reading on a spacer), as in claims 6-10. Crabtree et al., e.g., at p. pp. 10-11, disclose that the chimeric proteins may be expressed in a cell, reading on a lamellar structure, micelle or liposome, as in claim 11. Crabtree et al., at pp. 10-11, teach the claimed composition of the intended use, and also disclose and contemplate the use of the chimeric proteins as pharmaceuticals.

Response to Arguments

Applicant argues Applicant argues that Crabtree et al., do not suggest a composition wherein receptor domains are capable of interacting with the ligand more strongly than each of the receptor domains individually. Applicant argues that Crabtree does not teach a micelle.

Applicant's arguments, entered 11/03/2007, have been fully considered but they are not persuasive. In regards to whether Crabtree teaches domains capable of interacting more strongly that individual domains, the examiner respectfully submits that this is an assertion of fact, and is mere argument. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir 1997) ("An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a *prima facie* case of obviousness."). MPEP 2145.

Furthermore, the examiner respectfully submits that the strength of the interaction is an intended function or use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Crabtree deficiency in not teaching a micelle) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claims are not drawn to micelles, but to compositions that comprise conjugates that are micelle-forming. Onyuksel et al., US 6,217,886 B1, (cited solely to show an inherent physical principle, to show the general knowledge in the art at the time of filing, and to specifically address arguments), teaches:

> Of interest to the present invention is work relating to molecular aggregates called "micelles" which are defined as colloidal aggregates spontaneously formed by amphiphilic compounds in water above a critical solute concentration, the critical micellar concentration (CMC), and at solution temperatures above the critical micellar temperature (CMT). The molecules constituting the micelles are in rapid dynamic equilibrium with the unassociated molecules. The increase in the concentration above the CMC usually leads to an increase in the number of micelles without any change in micellar size; however, in certain cases with phospholipid mixed micelles, the spherical micelles enlarge into rod-shaped micelles (Carey et al., Arch. Inter Med. 130:506-527 (1972); Hjelm, Jr. et al., J. Phys. Chem. 96 (21):8653-8661 (1992)). The CMC is strongly temperature dependent,

> and at a given concentration the monomer to micelle transition occurs gradually over a broad temperature range (Almgren et al., Colloid Polym. Sci. 273:2-15 (1995)). An increase in the temperature leads to an increase in the number of aggregates, while the hydrodynamic radius remains constant (Nivaggioli et al., Langmuir. 11 (3):730-737 (1995); Alexandridis et al., Langmuir. 11: 1468-1476 (1995)). In general the increase in temperature leads to an increase in hydrophobic interactions and the water dielectric constant is reduced augmenting the ionic repulsion forces. There are many ways to determine the CMC of an amphiphilic compound (surface tension measurements, solubilization of water insoluble dye, or a fluorescent probe, conductivity measurements, light scattering, and the like). According to a preferred method, surface tension measurements may be used to determine the CMC of PEG-DSPE micelles at room temperature.

Onyuksel et al., at col. 8-col. 9, bridging paragraph. Therefore, the examiner respectfully submits that the amphiphilic compounds taught by Crabtree, in response to the requisite concentrations and environmental conditions, would result in micellar formation, (as taught by Onyuksel et al.).

13. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Capon et al., WO 96/23881 A1. This rejection is maintained for the reasons of record as set forth in the previous Office action. The rejection is copied below for the convenience of the reader.

Capon et al., WO 96/23881 A1, throughout the publication and abstract, disclose compositions for interacting with an inducer, reading on the claimed ligand, and at, e.g., pp. 1-3 and Figure 1, disclose compositions that are chimeric receptor proteins, which comprises a non-covalent association of a plurality of distinct conjugates, each conjugate comprising an extracellular inducer binding domain (e.g., pp. 6-7, 11) (such as IL-2, IL-3, IL-6 receptors, p. 18, or antibody binding regions, p. 23, which would inherently include at least acidic and basic amino acids, as in claim 5) and that become associated with each other by dimerization or oligomerization and cluster, reading on the claimed head group; a transmembrane domain (e.g., p. 7, 22), teaching that the transmembrane domain may be an artificial hydrophobic amino acid sequence which spans the plasma domain, which further reads on a hydrophilic spacer groups as in claims 8 and 9 of the instant application); and a cytoplasmic effector function signaling domain; said transmembrane and cytoplasmic effector function signaling reading on the claimed

tail group, wherein transmembrane domains of the tail groups of the conjugates would inherently form a hydrophobic aggregation with the conjugates movable within the association so that, in the presence of a ligand, at least two of the head groups would be appropriately positioned to form an epitope capable of interacting with the ligand more strongly than each of head groups individually. Capon et al., at p. 10, teach linkers that link together any of the aforementioned domains (further reading on the claimed spacer). Capon et al., at p. 13, teach a transmembrane domain that is a myristylation-targeting domain that may be linked to the N-terminus of a domain to allow for membrane association, as in claims 6 and 7 of the instant application). Capon et al., disclose that the chimeric polypeptides may be expressed in a cell, reading on a lamellar structure, micelle or liposome, as in claim 11. Capon et al. teach the claimed composition, regardless of the intended use, and also disclose and contemplate the use of chimeric polypeptides as mendicants, etc. (see abstract, p. 14, top).

Response to Arguments

Applicant argues Applicant argues that Capon et al., do not suggest a composition wherein receptor domains form an epitope. Applicant argues that Capon does not teach a micelle.

Applicant's arguments, entered 11/03/2007, have been fully considered but they are not persuasive. In regards to whether Capon does not teach a composition wherein receptor domains form an epitope domains capable of interacting more strongly that individual domains, the examiner respectfully submits that this is an assertion of fact, and is mere argument. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir 1997) ("An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a *prima facie* case of obviousness."). MPEP 2145.

Furthermore, the examiner respectfully submits that the formation of the epitope is an intended function or use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in

order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Capon deficiency in not teaching a micelle) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claims are not drawn to micelles, but to compositions that comprise conjugates that are micelle-forming. Onyuksel et al., US 6,217,886 B1, (cited solely to show an inherent physical principle, to show the general knowledge in the art at the time of filing, and to specifically address arguments), teaches:

> Of interest to the present invention is work relating to molecular aggregates called "micelles" which are defined as colloidal aggregates spontaneously formed by amphiphilic compounds in water above a critical solute concentration, the critical micellar concentration (CMC), and at solution temperatures above the critical micellar temperature (CMT). The molecules constituting the micelles are in rapid dynamic equilibrium with the unassociated molecules. The increase in the concentration above the CMC usually leads to an increase in the number of micelles without any change in micellar size; however, in certain cases with phospholipid mixed micelles, the spherical micelles enlarge into rod-shaped micelles (Carey et al., Arch. Inter Med. 130:506-527 (1972); Hjelm, Jr. et al., J. Phys. Chem. 96 (21):8653-8661 (1992)). The CMC is strongly temperature dependent, and at a given concentration the monomer to micelle transition occurs gradually over a broad temperature range (Almgren et al., Colloid Polym. Sci. 273:2-15 (1995)). An increase in the temperature leads to an increase in the number of aggregates, while the hydrodynamic radius remains constant (Nivaggioli et al., Langmuir. 11 (3):730-737 (1995); Alexandridis et al., Langmuir. 11: 1468-1476 (1995)). In general the increase in temperature leads to an increase in hydrophobic interactions and the water dielectric constant is reduced augmenting the ionic repulsion forces.

> There are many ways to determine the CMC of an amphiphilic compound (surface tension measurements, solubilization of water insoluble dye, or a fluorescent probe, conductivity measurements, light scattering, and the like). According to a preferred method, surface tension measurements may be used to determine the CMC of PEG-DSPE micelles at room temperature.

Onyuksel et al., at col. 8-col. 9, bridging paragraph. Therefore, the examiner respectfully submits that the amphiphilic compounds taught by Capon, in response to the requisite concentrations and environmental conditions, would result in micellar formation, (as taught by Onyuksel et al.).

14. Claims 1-6 and 8-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Ueda et al., US 2003/0095962 A1. This rejection is maintained for the reasons of record as set forth in the previous Office action. The rejection is copied below for the convenience of the reader.

Ueda et al., US 2003/0095962 A1, throughout the publication, e.g. the Examples, disclose chimeric polypeptides having the property that they associate with each other when a particular antigen is present, (e.g., para 0029, 0043, 0046-0049, 0063), which read on the claimed composition comprising a non-covalent association of a plurality of distinct conjugates; and wherein the polypeptide have variable domain sequence that are polypeptides or proteins or fragments thereof, including antibody variable sequences, (which would inherently include at least acidic and basic amino acids, as in claim 5), and where the variable domain sequence read on the claimed head group; and effector sequences and transmembrane sequences (para 0040-0041), which read on the claimed tail groups, wherein the tail groups of the conjugates form a hydrophobic aggregation and the conjugates are movable within the association (para 00620), so that, in the presence of an "antigen", (para 0043)reading on the claimed ligand ligand, at least two of the head groups would be appropriately positioned to form an epitope (i.e., capable of binding a ligand, as in the instant specification and claims) and capable of interacting with the ligand more strongly than each of head groups individually (see e.g., para 0049). Ueda et al. at para 0064, teach amino acid peptides (e.g., EpoR subunits) that connect variable, "head" regions and with effector "tail" regions, and which read on spacers, as in claim 8. Ueda et al., in the Examples, disclose that the chimeric polypeptides may be expressed in a cell, reading on a lamellar structure, micelle or liposome, as in claim 11. Ueda et al. teach the claimed composition, regardless of the intended use, and also disclose and contemplate the use of chimeric polypeptides as mendicants, etc.

Response to Arguments

Applicant argues Applicant argues that Ueda et al., do not suggest a composition wherein variable region sequences receptor are capable of interacting with the ligand more strongly than each of the sequences individually. Applicant argues that Ueda does not teach a micelle.

Applicant's arguments, entered 11/03/2007, have been fully considered but they are not persuasive. In regards to whether Ueda does not teach a composition variable region sequences receptor are capable of interacting with the ligand more strongly than each of the sequences individually, the examiner respectfully submits that this is an assertion of fact, and is mere argument. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir 1997) ("An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a *prima facie* case of obviousness."). MPEP 2145.

Furthermore, the examiner respectfully submits that the strength of the interaction is an intended function or use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Ueda deficiency in not teaching a micelle) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claims are not drawn to micelles, but to compositions that comprise conjugates that are micelle-forming. Onyuksel et al., US 6,217,886 B1, (cited solely to show an inherent physical principle, to show the general knowledge in the art at the time of filing, and to specifically address arguments), teaches:

> Of interest to the present invention is work relating to molecular aggregates called "micelles" which are defined as colloidal aggregates spontaneously formed by amphiphilic compounds in water above a critical solute concentration, the critical micellar concentration (CMC), and at solution temperatures above the critical micellar temperature (CMT). The molecules constituting the micelles are in rapid dynamic equilibrium with the unassociated molecules. The increase in the concentration above the CMC usually leads to an increase in the number of micelles without any change in micellar size; however, in certain cases with phospholipid mixed micelles, the spherical micelles enlarge into rod-shaped micelles (Carey et al., Arch. Inter Med. 130:506-527 (1972); Hjelm, Jr. et al., J. Phys. Chem. 96 (21):8653-8661 (1992)). The CMC is strongly temperature dependent, and at a given concentration the monomer to micelle transition occurs gradually over a broad temperature range (Almgren et al., Colloid Polym. Sci. 273:2-15 (1995)). An increase in the temperature leads to an increase in the number of aggregates, while the hydrodynamic radius remains constant (Nivaggioli et al., Langmuir. 11 (3):730-737 (1995); Alexandridis et al., Langmuir. 11: 1468-1476 (1995)). In general the increase in temperature leads to an increase in hydrophobic interactions and the water dielectric constant is reduced augmenting the ionic repulsion forces. There are many ways to determine the CMC of an amphiphilic compound (surface tension measurements, solubilization of water insoluble dye, or a fluorescent probe, conductivity measurements, light scattering, and the like). According to a preferred method, surface tension measurements

> may be used to determine the CMC of PEG-DSPE micelles at room temperature.

Onyuksel et al., at col. 8-col. 9, bridging paragraph. Therefore, the examiner respectfully submits that the amphiphilic compounds taught by Ueda, in response to the requisite concentrations and environmental conditions, would result in micellar formation, (as taught by Onyuksel et al.).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over each of **Crabtree et al.**, WO 95/02684 A1, (of record); **Capon et al.**, WO 96/23881 A1, (of record); or **Ueda et al.**, US 2003/0095962 A1, (of record); each taken separately, and in view of **Onyuksel et al.**, US 6,217,886 B1.

These rejections are necessitated by applicant's amendments to the claims.

The claim is drawn to a micelle comprising a plurality of conjugate molecules.

The references of **Crabtree et al.**, WO 95/02684 A1, (of record); **Capon et al.**, WO 96/23881 A1, (of record); or **Ueda et al.**, US 2003/0095962 A1, (of record), are relied upon as above.

Crabtree et al., WO 95/02684 A1, (of record); Capon et al., WO 96/23881 A1, (of record); or Ueda et al., US 2003/0095962 A1, (of record) do not teach micelles of conjugates.

Onyuksel et al., US 6,217,886 B1, throughout the patent, teach the formation of micelles from biologically active amphipathic compounds.

It would have been *prima facie* obvious, at the time the invention was made, for one of ordinary skill in the art to have made and used a micelle, as taught by Onyuksel et al., comprising a plurality of conjugate molecules, as taught by Crabtree, Capon or Ueda, and as in claim 32.

One of ordinary skill in the art would have been motivated to make and use a micelle because Onyuksel et al., at col. 11, lines 44-65, teach that micelles have desirable qualities of delivery and enhancing bioactivity of active compounds.

One of ordinary skill in the art would have had a reasonable expectation of success in making and using micelles, because Onyuksel teach that formation of micelles was known in the art, as were amphipathic conjugates individually comprising a plurality of ligands, as taught by Crabtree, Capon and Ueda.

Conclusion

17. Claims 1-12 and 32 stand finally rejected.

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark L. Shibuya, Ph.D. whose telephone number is (571) 272-0806. The examiner can normally be reached on M-F, 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. James Schultz can be reached on (571) 272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mark L. Shibuya, Ph.D.
Primary Examiner
Art Unit 1639